

REMARKS

Claims 1-2 and 5-30 are all the claims pending in the application. Claim 1 has been amended to incorporate claim 3. Claim 2 has been amended to incorporate claims 3 and 4, and support for the additional amendment to claim 2, can be found, for example, at page 16, lines 13-17 of the present specification. Claims 3 and 4 have been canceled.

Entry of the above amendments is respectfully requested.

Initially, the Examiner is respectfully requested to acknowledge Applicants' claim to domestic priority under 35 U.S.C. § 119 and to confirm receipt of the verified English translation of provisional application no. 60/246,587 filed February 6, 2001 in the provisional application. Copies of the date-stamped filing receipt and Submission of the verified English translation along with a copy of the verified English translation of provisional application no. 60/246,587 are submitted herewith.

I. Rejection of Claims 1-6, 26, 28 and 29 Under 35 U.S.C. § 102/103

On pages 2-3 of the Office Action, claims 1-6, 26, 28 and 29 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Friedlander (U.S. Patent 5,536,760).

Applicants respectfully traverse this rejection and submit that Friedlander does not teach or suggest the fumarate derivative compounds of the present invention.

Friedlander discloses a liquid, radiation curable coating composition comprising an unsaturated polyester having a plurality of maleate and/or fumarate groups and a non-polymerized, co-curable vinyl ether component free-radically reactive with said unsaturation of

said polyester. The vinyl ether component is selected from the group consisting of: (a) vinyl ester compounds containing an average of at least two reactive vinyl ether groups per molecule and (b) a vinyl ether containing group bonded to the polyester (claim 1 of Friedlander).

Friedlander discloses that vinyl ether groups of the vinyl ether component (compound (b)) are structurally incorporated in the unsaturated polyester via two urethane bonds by using an organic diisocyanate compound (*see* col. 4, lines 1-15 and lines 37-40 and in Example 8).

The compounds of the present invention according to amended claims 1 and 2 comprise at least one alkenyl ether group represented by formula (1) bonded directly to the unsaturated polyester or to the unsaturated polyester polyether as represented by formula (2) or formulae (2) and (5).

Therefore, the compounds disclosed by Friedlander are completely different from the compounds of the present invention according to claims 1 or 2.

In addition, Friedlander is silent with respect to the molar ratio of vinyl ether containing groups to maleate and/or fumarate groups of the unsaturated polyester in a molecule, which is an important feature of the present invention (as discussed below).

In view of the above, Friedlander does not teach or suggest the compounds of the present invention. Accordingly, withdrawal of the foregoing rejection is respectfully requested.

II. Rejection of Claims 2, 4-6, 26, 28 and 29 Under 35 U.S.C. § 102/103

On page 3 of the Office Action, claims 2, 4-6, 26, 28 and 29 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over EP 0 957 079 (hereinafter "EP '079").

Applicants respectfully traverse this rejection and submit that EP' 079 does not teach or suggest the fumarate derivative compounds of the present invention.

EP '079 discloses a fumarate derivative having two terminal groups represented by formula (1) of the present invention and only one group represented by formula (2) of the present invention as a repeating unit. In contrast, as noted above, the fumarate derivative of the present invention according to amended claim 2 comprises 2 to 10 repeating units represented by formula (2) and 2 to 5 repeating units represented by formula (5).

Therefore, EP '079 does not teach the fumarate derivatives of the present invention because the compounds of EP '079 are different from the fumarate derivatives of the present invention.

In addition, the compounds of the present invention provide unexpectedly superior properties compared to the compounds of EP '079.

EP '079 describes a compound having one inside double bond derived from a fumarate and two terminal double bonds derived from an alkenyl ether (which is different from a compound of the present invention according to claim 2, which has double bond(s) derived from alkenyl ether and 2 to 10 double bonds derived from fumarate in a molecule, and is polyfunctionalized). The compounds described in EP '079 are inferior in heat-resistance, electrical properties and curing properties, such as hardness. This is because in the compounds of EP '079, the double bond derived from alkenyl ether hardly polymerizes by radical polymerization and cures with the double bond derived from fumarate by alternating polymerization. As a result, curability of the compound is bad.

In contrast, the compounds of the present invention have, for example, excellent curing properties (*see* page 4, line 14 to page 5, line 21 of the present specification). More specifically, a compound of the present invention having a molar ratio of alkenyl ether group/fumarate group of 1 or less (as shown in the Examples) has good curability, and a preferable molar ratio of alkenyl ether group/fumarate group is from 0.2 to 2, and more preferably from 0.8 to 1.5 (*see* page 14, lines 10-17 of the present specification).

The superior properties of the compounds of the present invention compared to the compounds of EP '079 can be seen from the Examples and Comparative Examples of the present invention. In this regard, the Examiner's attention is directed to Table 6 at pages 81-82 of the present specification. The Comparative Examples correspond to compounds of EP '079 and exhibited low pencil hardness, whereas the Examples of the present invention exhibited high pencil hardness. Therefore, the compounds of the present invention provide unexpectedly superior properties compared to the compounds of EP '079.

In view of the above, it is respectfully submitted that EP '079 fails to teach or suggest the present invention, and withdrawal of the foregoing rejection is respectfully requested.

III. Conclusion

For the foregoing reasons, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/088,229

Attorney Docket Q61659

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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